

Using Multipliers to Measure Economic Impacts

Industry multipliers are valuable for measuring the broad impacts of economic development activity. Multipliers can be used to estimate, for example, how a new manufacturing plant can create total jobs and income that exceed the plant payroll. Conversely, they can also be used to estimate the job and income losses occurring throughout a community as a result of a plant closure. Multipliers provide valuable information even when no expansions or closures occur, because the size of the multiplier indicates the relationship of an industry to the economy.

What is a Multiplier?

A multiplier shows the additional (or indirect) change to the economy resulting from each change in a selected industry. For example, the employment multiplier for the California construction industry is 2.12. This means that each construction industry job supports another 1.12 jobs statewide. A multiplier is always greater than one, because the one represents the original level in the selected industry. Multipliers are available for the entire state, as shown in the attached table, or for sub-state areas such as counties.

This briefing paper discusses the benefits and limitations of using industry multipliers to measure economic impacts. It is a companion to the attached table, "RIMSII Multipliers for the State of California".

What Affects the Size of a Multiplier?

Multipliers can vary widely by industry and area. Multipliers are higher for regions with a diverse industry mix. Industries that make extensive use of materials from within California have higher statewide multipliers. Industries that buy most of their material from outside the state tend to have lower multipliers. The same is true in the case of multipliers for counties or other sub-state areas.

Multipliers tend to be higher for industries located in large urban areas, because more of the spending by the industry stays within the area. Smaller, rural areas generally have lower multipliers, because industries must use firms outside the area for supplies and services. Multipliers for the entire state are larger than sub-state multipliers, because the initial gains (or losses) in an industry are magnified over a larger geographic area.

Limitations of Multipliers

Multipliers do not always measure indirect economic impacts correctly. This situation is the result of assumptions about the flow of goods and services that are made when multipliers are developed.

The most important assumption is that trading patterns are fixed. That is, each industry buys supplies from local and outside industries in fixed proportions, and production by suppliers automatically changes with production in the purchasing industry. It follows from this assumption that multipliers will estimate impacts realistically only if new firms buy from local industries in the same proportion as existing firms in the area. Moreover, local industries must be able to increase their production to supply the new firm. These conditions are rarely met completely. As a result, multipliers usually overstate indirect impacts.

Multipliers should only be applied to projects that are a genuine source of net new economic activity in an area. Incoming firms are not always a net new source of economic activity, because they can take business away from existing firms. New retail or entertainment developments create indirect economic impacts only if they capture spending that formerly left the area, or if they attract new spending from outside the area.

Multipliers should be used with particular caution in two cases: industries processing local materials and plant closures.

Industries Processing Local Materials. There is not always a fixed relationship between production and processing industries. For example, if a new food processing plant opens, agricultural production may not be able to automatically increase to supply the plant. Similarly, farm production does not always fall when a food processing plant closes. Previously processed fruits and vegetables may be purchased as fresh products by consumers. Due to the often-varying relationship between industries, the indirect economic impacts indicated by multipliers may not occur.

Plant Closures. Multipliers usually overstate the impact of plant closures. The assumption of fixed trading patterns implies that suppliers always cut production and layoff workers in direct proportion to their loss in sales to the closed plant. In reality, businesses are always adapting to changing economic conditions. Suppliers may find new markets, or growth within an area may create new opportunities for suppliers. As a result, a multiplier may provide the upper limit on indirect impacts, rather than a reasonable estimate of the impacts.

The attached Table 1 contains California multipliers for output, earnings, and employment for 38 industry aggregations. Table 2 contains the multipliers for more than 400 individual industries. These multipliers were developed by the U.S. Bureau of Economic Analysis, and are based on the 1997 Benchmark Input-Output Table for the Nation and 1999 regional data. For more information on these multipliers, see <http://www.bea.doc.gov/bea/regional/rims/>.

Table 1
RIMS II Multipliers for the State of California (July 2002 Release)
Total Multipliers for Output, Earnings, and Employment by Industry Aggregation

California Industry	Final-demand multipliers			Direct-effect multipliers	
	Output ¹ (dollars)	Earnings ² (dollars)	Employment ³ (number of jobs)	Earnings ⁴ (dollars)	Employment ⁵ (number of jobs)
Farm and agriculture services, forestry, and fishing:					
1 Farm products and agricultural, forestry, and fishing services.....	2.1726	0.5984	27.3	2.1049	1.6093
2 Forestry and fishing products.....	2.0806	0.4845	14.4	2.7590	3.4155
Mining:					
3 Coal mining.....	1.8102	0.4266	9.1	2.0664	3.2153
4 Oil and gas extraction.....	1.9062	0.2844	6.4	2.6974	4.4829
5 Metal mining and nonmetallic minerals, except fuels.....	1.9148	0.5315	11.7	1.8725	2.5117
Construction:					
6 Construction.....	2.3574	0.7583	21.5	2.0624	2.1249
Manufacturing:					
7 Food and kindred products and tobacco products.....	2.1267	0.4246	13.2	3.5637	3.9572
8 Textile mill products.....	1.8536	0.4239	14.3	2.2045	2.0065
9 Apparel and other textile products.....	2.2674	0.5680	20.3	2.6436	2.1044
10 Paper and allied products.....	1.8229	0.4226	10.9	2.1442	2.4518
11 Printing and publishing.....	1.9511	0.5849	15.5	1.8499	2.0085
12 Chemicals and allied products and petroleum and coal products.....	1.8453	0.3255	7.3	2.8119	4.3781
13 Rubber and misc. plastic products and leather and leather products.....	1.8818	0.4565	13.4	2.0771	2.0126
14 Lumber and wood products and furniture and fixtures.....	2.0330	0.5177	15.9	2.2232	2.0962
15 Stone, clay, and glass products.....	2.0918	0.5603	14.2	2.1617	2.4692
16 Primary metal industries.....	1.9348	0.4520	12.0	2.3280	2.5283
17 Fabricated metal products.....	2.0095	0.5499	14.9	2.0248	2.1440
18 Industrial machinery and equipment.....	2.3334	0.5700	12.4	2.7491	4.1872
19 Electronic and other electric equipment.....	2.2310	0.5553	12.2	2.5652	3.8555
20 Motor vehicles and equipment.....	1.9826	0.4054	10.5	2.9278	3.4969
21 Other transportation equipment.....	2.1907	0.6451	14.2	2.0892	2.7665
22 Instruments and related products.....	2.1254	0.6152	13.2	2.0452	2.9137
23 Miscellaneous manufacturing industries.....	2.0932	0.6023	19.7	2.0298	1.8096
Transportation and public utilities:*					
24 Transportation.....	2.2984	0.6949	19.8	2.1554	2.1850
25 Communications.....	2.2267	0.5682	12.5	2.6536	4.8300
26 Electric, gas, and sanitary services.....	2.0843	0.3788	8.2	3.0425	5.4818
Wholesale and Retail trade:					
27 Wholesale trade.....	2.0793	0.6289	16.0	1.9714	2.2523
28 Retail trade.....	2.1183	0.6792	24.9	1.8345	1.5717
Finance, insurance, and real estate:					
29 Depository & nondepository institutions; security & commodity brokers.....	2.2912	0.7143	16.6	2.1566	2.7075
30 Insurance.....	2.7515	0.8926	22.9	2.4857	2.7541
31 Real estate.....	1.4750	0.1825	5.6	3.6649	3.0486
Services					
32 Hotels & other lodging; amusement & recreation services; motion pictures.....	2.4808	0.7856	26.7	2.2188	1.9842
33 Personal services.....	2.3094	0.7965	36.2	1.8799	1.4511
34 Business services.....	2.2397	0.8064	20.9	1.8113	2.0051
35 Eating and drinking places.....	2.2743	0.6791	33.4	1.9724	1.4349
36 Health services.....	2.3460	0.8511	22.7	1.7943	1.9503
37 Miscellaneous services.....	1.7861	0.4097	14.4	2.1686	1.8010
Households					
38 Households.....	1.4255	0.3993	12.5	-----	-----

* Includes Federal Government enterprises.

1 Each entry in column 1 represents the dollar change in output of the total California economy for each \$1 change of output delivered by the selected California industry.

2 Each entry in column 2 represents the dollar change in earnings of households employed by all California industries for each \$1 change of output delivered by the selected California industry.

3 Each entry in column 3 represents the change in the number of jobs in the total California economy for each \$1 million change of output delivered by the selected California industry.
Because the employment multipliers are based on 1999 data, the output delivered to final demand should be in 1999 dollars.

4 Each entry in column 4 represents the dollar change in earnings of households employed by all California industries for each \$1 change of earnings paid directly to households employed by the selected California industry.

5 Each entry in column 5 represents the change in the number of jobs in the total California economy for each single job change in the selected California industry.

Source: U.S. Department of Commerce, Bureau of Economic Analysis. Data released July 2002.

Multipliers are based on the 1997 Benchmark Input-Output Table for the Nation and 1999 regional data. For further information, see *Regional Multipliers: A User Handbook for the Regional Input-Output Modeling System (RIMS II)*. Third Edition, Wash DC. (202) 606-5343. Web Address: <http://www.bea.doc.gov/bea/regional/rims/>

Table 2
RIMS II Multipliers for the State of California (July 2002 Release)
Total Multipliers for Output, Earnings, and Employment by Individual Industry

California Industry	Final-demand multipliers			Direct-effect multipliers	
	Output ¹ (dollars)	Earnings ² (dollars)	Employment ³ (number of jobs)	Earnings ⁴ (dollars)	Employment ⁵ (number of jobs)
AGRICULTURE, FORESTRY, AND FISHERIES					
1 Livestock and livestock products:					
1.0100 Dairy farm products.....	2.1174	0.4184	16.945	3.2618	2.4684
1.0200 Poultry and eggs.....	2.3769	0.5111	20.201	3.5887	2.6480
1.0301 Meat animals.....	2.1698	0.4121	16.745	3.4127	2.4639
1.0302 Miscellaneous livestock.....	2.1034	0.4430	17.820	2.7657	2.0791
2 Other agricultural products:					
2.0100 Cotton.....	2.1394	0.5285	23.462	2.5800	1.9958
2.0201 Food grains.....	1.9055	0.3659	15.875	2.6683	1.8235
2.0202 Feed grains.....	1.9078	0.3808	16.969	2.7978	1.9626
2.0203 Grass seeds.....	1.7462	0.3326	14.106	2.5636	1.7119
2.0300 Tobacco.....	1.0000	0.0000	0.000	0.0000	0.0000
2.0401 Fruits.....	2.2863	0.6203	31.315	2.4466	1.7127
2.0402 Tree nuts.....	2.1779	0.5782	28.902	2.4173	1.7042
2.0501 Vegetables.....	2.1470	0.5614	25.779	2.5716	1.9982
2.0502 Sugar crops.....	1.7859	0.3491	15.053	2.6181	1.9152
2.0503 Miscellaneous crops.....	1.0000	0.0000	0.000	0.0000	0.0000
2.0600 Oil bearing crops.....	1.9278	0.4054	18.284	2.5270	1.8067
2.0701 Forest products.....	1.4303	0.2550	10.787	1.9036	1.5824
2.0702 Greenhouse and nursery products.....	1.6898	0.4726	20.683	1.7234	1.4824
3 Forestry and fishery products:					
3.0001 Forestry products.....	2.2359	0.5267	22.609	4.8940	5.1317
3.0002 Commercial fishing.....	2.0467	0.5155	12.293	2.3351	3.4481
4 Agricultural, forestry, and fishery services:					
4.0001 Agricultural, forestry, and fishery services.....	2.3437	0.8734	44.746	1.7648	1.3801
4.0002 Landscape and horticultural services.....	2.3976	0.9872	37.462	1.6964	1.5609
MINING					
5+6 Metallic ores mining:					
5.0001 Iron and ferroalloy ores, and miscellaneous metal ores, n.e.c.....	1.9367	0.4817	12.104	2.1500	2.6924
6.0100 Copper ore.....	1.0000	0.0000	0.000	0.0000	0.0000
6.0200 Nonferrous metal ores, except copper.....	1.9141	0.5013	18.215	2.0862	1.7999
7 Coal mining:					
7.0000 Coal.....	1.8050	0.4348	9.602	2.1061	3.3817
8 Crude petroleum and natural gas:					
8.0001 Crude petroleum and natural gas.....	1.7938	0.2478	5.391	2.3498	3.7572
9+10 Nonmetallic minerals mining:					
9.0001 Dimension, crushed and broken stone.....	1.9478	0.5479	13.238	1.9697	2.5306
9.0002 Sand and gravel.....	1.9613	0.6114	12.890	1.7670	2.6277
9.0003 Clay, ceramic, and refractory minerals.....	1.9071	0.5236	11.939	1.9007	2.5946
9.0004 Nonmetallic mineral services and miscellaneous minerals.....	1.9666	0.5752	13.820	1.8978	2.4071
10.0000 Chemical and fertilizer minerals.....	1.7806	0.4482	9.751	1.8966	2.8365
CONSTRUCTION					
11 New construction:					
11.0101 New residential 1-unit structures, nonfarm.....	2.4494	0.8505	26.558	1.9834	1.9546
11.0102 New residential 2-4 unit structures, nonfarm.....	2.4289	0.7066	20.849	2.4641	2.4763
11.0105 New residential additions and alterations, nonfarm.....	2.3424	0.6978	20.784	2.2584	2.3180
11.0108 New residential garden and high-rise apartments.....	2.3735	0.7839	22.822	2.0699	2.1256
11.0400 Highways and streets.....	2.3909	0.7208	18.266	2.2967	2.8133
11.0501 New farm housing units and additions and alterations.....	2.3016	0.6937	18.785	2.1658	2.5421
11.0601 Petroleum and natural gas well drilling.....	2.1606	0.9435	26.779	1.5467	1.6411
11.0602 Petroleum, natural gas, and solid mineral exploration.....	2.3052	0.9099	16.796	1.5972	2.5896
11.0603 Access structures for solid mineral development.....	2.6619	0.9092	25.649	2.6109	2.5920
11.0800 Office, industrial, and commercial buildings construction.....	2.3981	0.7792	21.637	2.1859	2.3803
11.0900 Other new construction.....	2.4449	0.7698	21.073	2.3639	2.6168
12 Maintenance and repair construction:					
12.0101 Maintenance and repair of farm and nonfarm residential structures.....	2.3016	0.7369	22.099	2.0403	2.1150
12.0214 Maintenance and repair of highways and streets.....	2.3488	0.7396	19.312	2.1728	2.5729
12.0215 Maintenance and repair of petroleum and natural gas wells.....	2.1363	0.9108	25.864	1.5590	1.6551
12.0300 Other maintenance and repair.....	2.3072	0.7576	21.398	2.0364	2.2196
MANUFACTURING					
13 Ordnance and accessories:					
13.0100 Guided missiles and space vehicles.....	2.2488	0.6694	14.011	2.2140	3.6573
13.0200 Ammunition, except for small arms, n.e.c.....	2.0177	0.5613	13.955	2.1511	2.5791
13.0300 Tanks and tank components.....	1.7258	0.4410	9.280	1.9133	3.1932
13.0500 Small arms.....	1.8617	0.5110	15.466	2.0025	1.9787
13.0600 Small arms ammunition.....	1.8622	0.5100	15.334	1.9900	1.9806
13.0700 Ordnance and accessories, n.e.c.....	1.6820	0.5432	14.242	1.5703	1.7637
14 Food and kindred products:					
14.0101 Meat packing plants.....	1.7873	0.3304	11.174	2.3018	2.3949
14.0102 Sausages and other prepared meat products.....	1.8221	0.3136	10.102	3.0985	2.8423
14.0105 Poultry slaughtering and processing.....	2.1177	0.4098	15.139	2.9635	2.6953
14.0200 Creamery butter.....	2.7525	0.4831	17.723	4.3069	3.0527
14.0300 Natural, processed, and imitation cheese.....	2.7129	0.4564	15.026	5.4065	7.2972
14.0400 Dry, condensed, and evaporated dairy products.....	2.1281	0.3339	10.566	4.3016	5.2529
14.0500 Ice cream and frozen desserts.....	2.3453	0.4431	12.904	3.7183	4.6056

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14.0600 Fluid milk.....	2.7003	0.4890	15.861	4.5088	6.9675
14.0700 Canned and cured fish and seafoods.....	2.0584	0.4576	14.682	2.7290	2.2604
14.0800 Canned specialties.....	2.0374	0.3745	10.477	3.5413	4.1064
14.0900 Canned fruits, vegetables, preserves, jams, and jellies.....	2.2428	0.4394	13.442	3.8967	4.2829
14.1000 Dehydrated fruits, vegetables, and soups.....	2.2245	0.4162	12.405	3.8657	4.2669
14.1100 Pickles, sauces, and salad dressings.....	1.8269	0.3246	9.019	3.2596	4.1460
14.1200 Prepared fresh or frozen fish and seafoods.....	1.9870	0.4068	15.454	3.0055	2.0900
14.1301 Frozen fruits, fruit juices, and vegetables.....	2.3985	0.4922	17.553	4.4422	3.9016
14.1302 Frozen specialties, n.e.c.....	2.0268	0.3976	13.097	2.9232	2.6853
14.1401 Flour and other grain mill products.....	1.9509	0.3364	9.482	4.3230	5.7891
14.1402 Cereal breakfast foods.....	2.3547	0.4798	12.652	5.2132	7.1651
14.1403 Prepared flour mixes and doughs.....	2.1462	0.4074	11.508	3.3246	3.6975
14.1501 Dog and cat food.....	2.2205	0.4149	11.024	4.9318	6.9766
14.1502 Prepared feeds, n.e.c.....	1.8806	0.3319	9.238	3.2747	3.8286
14.1600 Rice milling.....	1.9419	0.3252	9.386	4.8160	5.1866
14.1700 Wet corn milling.....	1.6887	0.2481	7.343	3.5571	4.5815
14.1801 Bread, cake, and related products.....	2.0119	0.5676	16.832	1.9479	2.0134
14.1802 Cookies and crackers.....	1.8480	0.3967	11.972	2.2815	2.2946
14.1803 Frozen bakery products, except bread.....	2.2802	0.5146	16.711	2.7727	2.4610
14.1900 Sugar.....	2.1378	0.3801	11.347	3.4747	4.3244
14.2002 Chocolate and cocoa products.....	2.2224	0.4419	13.130	3.5772	4.3931
14.2004 Salted and roasted nuts and seeds.....	2.5062	0.4980	19.889	5.1392	6.0183
14.2005 Candy and other confectionery products, including chewing gum.....	2.0327	0.4181	12.572	2.9137	2.9578
14.2101 Malt beverages.....	1.8675	0.3142	7.849	3.5201	4.9769
14.2102 Malt.....	1.9594	0.3390	9.983	3.7917	5.1628
14.2103 Wines, brandy, and brandy spirits.....	1.9925	0.3825	11.669	3.7025	4.3680
14.2104 Distilled and blended liquors.....	1.6684	0.2342	6.263	5.4149	6.8255
14.2200 Bottled and canned soft drinks.....	2.2097	0.4116	11.110	3.9319	4.3801
14.2300 Flavoring extracts and flavoring syrups, n.e.c.....	1.4367	0.1770	4.773	3.0421	4.0714
14.2400 Cottonseed oil mills.....	2.8421	0.5561	20.405	6.0738	7.7123
14.2500 Soybean oil mills.....	1.7861	0.2802	10.013	3.7941	3.2075
14.2600 Vegetable oil mills, n.e.c.....	2.2004	0.4301	14.024	3.9110	5.7430
14.2700 Animal and marine fats and oils.....	1.9086	0.4420	12.192	2.2490	2.4826
14.2800 Roasted coffee.....	2.3560	0.4604	15.502	5.9221	1.4720
14.2900 Edible fats and oils, n.e.c.....	1.7891	0.2623	7.422	3.5979	4.4099
14.3000 Manufactured ice.....	2.0121	0.5978	19.569	1.9765	1.8272
14.3100 Macaroni, spaghetti, vermicelli, and noodles.....	2.1573	0.4238	12.594	3.9278	3.3924
14.3201 Potato chips and similar snacks.....	1.9578	0.3929	12.053	2.8844	3.1264
14.3202 Food preparations, n.e.c.....	2.0200	0.4082	13.062	3.1283	2.7698
15 Tobacco products:					
15.0101 Cigarettes.....	1.0000	0.0000	0.000	0.0000	0.0000
15.0102 Cigars.....	1.7839	0.5502	11.030	1.7208	2.7804
15.0103 Chewing and smoking tobacco and snuff.....	1.0000	0.0000	0.000	0.0000	0.0000
15.0200 Tobacco stemming and redrying.....	1.5550	0.2659	9.136	2.7420	2.1177
16 Broad and narrow fabrics, yarn and thread mills:					
16.0100 Broadwoven fabric mills and fabric finishing plants.....	1.9775	0.5165	18.522	2.1337	1.9399
16.0200 Narrow fabric mills.....	1.8143	0.4867	16.822	1.9362	1.7763
16.0300 Yarn mills and finishing of textiles, n.e.c.....	1.8471	0.3890	14.860	2.5575	2.1735
16.0400 Thread mills.....	1.6298	0.3252	12.030	2.1501	1.8670
17 Miscellaneous textile goods and floor coverings:					
17.0100 Carpets and rugs.....	1.6094	0.2908	8.734	2.4323	2.5406
17.0600 Coated fabrics, not rubberized.....	1.9816	0.4733	13.296	2.4489	2.6480
17.0700 Tire cord and fabrics.....	1.5287	0.2703	11.288	2.2081	1.6836
17.0900 Cordage and twine.....	1.8985	0.5381	17.914	1.9249	1.7782
17.1001 Nonwoven fabrics.....	1.7936	0.3763	10.194	2.4766	2.8982
17.1100 Textile goods, n.e.c.....	2.0117	0.5218	16.986	2.3109	2.0795
18 Apparel:					
18.0101 Women's hosiery, except socks.....	1.8001	0.4402	16.683	2.0180	1.7172
18.0102 Hosiery, n.e.c.....	1.8310	0.4740	17.216	1.9439	1.7338
18.0201 Knit outerwear mills.....	1.8886	0.4538	16.567	2.1177	1.8590
18.0202 Knit underwear and nightwear mills.....	1.8633	0.4333	14.351	2.2120	2.1067
18.0203 Knitting mills, n.e.c.....	1.8761	0.4870	19.986	2.0202	1.6304
18.0300 Knit fabric mills.....	1.9476	0.4220	13.505	2.4108	2.3783
18.0400 Apparel made from purchased materials.....	2.3258	0.5764	21.238	2.7543	2.2514
19 Miscellaneous fabricated textile products:					
19.0100 Curtains and draperies.....	2.0922	0.6303	25.006	1.9771	1.6441
19.0200 Housefurnishings, n.e.c.....	1.9177	0.4080	14.337	2.8313	2.2914
19.0301 Textile bags.....	1.9693	0.4925	17.028	2.2565	1.9671
19.0302 Canvas and related products.....	1.9811	0.5870	18.903	1.8945	1.8326
19.0303 Pleating and stitching.....	2.0052	0.4009	16.172	3.0757	2.2136
19.0304 Automotive and apparel trimmings.....	1.9635	0.5761	22.749	1.8907	1.6205
19.0305 Schiffli machine embroideries.....	1.9403	0.6318	29.676	1.7392	1.4453
19.0306 Fabricated textile products, n.e.c.....	1.8962	0.4786	16.764	2.1849	1.8808
20+21 Lumber and wood products:					
20.0100 Logging.....	1.5735	0.2658	8.307	2.2362	2.4081
20.0200 Sawmills and planing mills, general.....	1.9237	0.4676	12.986	2.0766	2.3511
20.0300 Hardwood dimension and flooring mills.....	2.0995	0.6347	23.628	1.9217	1.6425
20.0400 Special product sawmills, n.e.c.....	2.1145	0.4296	14.399	2.9707	2.4720
20.0501 Millwork.....	2.2675	0.5541	16.680	2.7519	2.5728

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California Industry	Final-demand multipliers			Direct-effect multipliers	
	Output ¹ (dollars)	Earnings ² (dollars)	Employment ³ (number of jobs)	Earnings ⁴ (dollars)	Employment ⁵ (number of jobs)
20.0502 Wood kitchen cabinets.....	2.1364	0.6046	19.108	2.1025	1.9785
20.0600 Veneer and plywood.....	1.8974	0.4264	12.947	2.2750	2.2680
20.0701 Structural wood members, n.e.c.....	2.1771	0.5282	16.147	2.6103	2.4268
20.0702 Prefabricated wood buildings and components.....	2.2429	0.4853	14.415	3.4011	3.2200
20.0703 Mobile homes.....	2.1278	0.5824	15.904	2.2262	2.4970
20.0800 Wood preserving.....	1.9940	0.4168	13.007	2.8320	2.5136
20.0901 Wood pallets and skids.....	2.1680	0.5738	20.934	2.3106	1.8685
20.0903 Wood products, n.e.c.....	2.1317	0.5461	18.657	2.3663	1.9967
20.0904 Reconstituted wood products.....	1.9452	0.4473	12.075	2.3424	2.6959
21.0000 Wood containers, n.e.c.....	2.1416	0.4818	15.168	2.8345	2.4721
22+23 Furniture and fixtures:					
22.0101 Wood household furniture, except upholstered.....	2.0707	0.5675	20.709	2.1494	1.7817
22.0102 Household furniture, n.e.c.....	1.9834	0.5061	15.658	2.1390	2.0431
22.0103 Wood television and radio cabinets.....	2.0952	0.4939	15.634	2.5542	2.2871
22.0200 Upholstered household furniture.....	2.0839	0.5471	18.394	2.2762	2.0222
22.0300 Metal household furniture.....	2.0547	0.5426	17.713	2.1887	1.9904
22.0400 Mattresses and bedsprings.....	2.0255	0.4892	14.998	2.5167	2.4542
23.0100 Wood office furniture.....	2.1463	0.6386	20.889	2.0643	1.9056
23.0200 Office furniture, except wood.....	2.0889	0.5853	16.417	2.1918	2.3645
23.0300 Public building and related furniture.....	1.9911	0.4759	14.696	2.4781	2.3363
23.0400 Wood partitions and fixtures.....	2.1009	0.6528	18.838	1.9157	2.0289
23.0500 Partitions and fixtures, except wood.....	2.0094	0.5599	16.441	2.0531	2.0858
23.0600 Drapery hardware and window blinds and shades.....	1.8728	0.4672	15.329	2.0959	1.9174
23.0700 Furniture and fixtures, n.e.c.....	1.9356	0.6072	17.767	1.7941	1.8459
24 Paper and allied products, except containers:					
24.0100 Pulp mills.....	1.9383	0.3736	9.648	2.9869	4.0518
24.0400 Envelopes.....	1.9629	0.5709	15.575	1.9181	2.1182
24.0500 Sanitary paper products.....	1.6306	0.2864	7.478	2.6274	3.2292
24.0701 Paper coating and glazing.....	1.8596	0.4057	9.981	2.4549	3.3935
24.0702 Bags, except textile.....	1.8479	0.4421	13.475	2.1423	2.0923
24.0703 Die-cut paper and paperboard and cardboard.....	1.8538	0.4747	12.699	2.0529	2.3380
24.0705 Stationery, tablets, and related products.....	1.7100	0.4117	12.421	1.9538	1.9602
24.0706 Converted paper products, n.e.c.....	1.8468	0.4402	12.424	2.1894	2.3206
24.0800 Paper and paperboard mills.....	1.9258	0.4285	10.813	2.4589	3.2243
25 Paperboard containers and boxes:					
25.0000 Paperboard containers and boxes.....	1.8275	0.4464	11.607	2.1007	2.4847
26A Newspapers and periodicals:					
26.0100 Newspapers.....	1.9474	0.6426	18.353	1.7538	1.8611
26.0200 Periodicals.....	2.0208	0.5354	12.900	2.2839	3.1632
26B Other printing and publishing:					
26.0301 Book publishing.....	1.8279	0.4450	11.635	2.1155	2.6291
26.0302 Book printing.....	2.0172	0.6416	19.267	1.8548	1.8727
26.0400 Miscellaneous publishing.....	1.7864	0.4244	11.154	2.2279	2.6431
26.0501 Commercial printing.....	2.0059	0.6512	17.949	1.8255	1.9858
26.0601 Manifold business forms.....	1.7807	0.4868	14.048	1.8674	1.9392
26.0602 Blankbooks, looseleaf binders and devices.....	2.0216	0.5906	19.286	2.0703	1.9767
26.0700 Greeting cards.....	1.7979	0.3440	10.057	2.3328	2.4548
26.0802 Bookbinding and related work.....	2.0658	0.7868	29.253	1.6412	1.4944
26.0803 Typesetting.....	2.0931	0.8205	21.272	1.6517	1.8944
26.0806 Platemaking and related services.....	2.1405	0.7980	19.103	1.7371	2.1650
27A Industrial and other chemicals:					
27.0100 Industrial inorganic and organic chemicals.....	1.9716	0.4439	10.477	2.4823	3.5150
27.0401 Gum and wood chemicals.....	1.8471	0.3606	10.813	2.6834	2.5699
27.0402 Adhesives and sealants.....	1.9856	0.4983	12.213	2.2177	2.8636
27.0403 Explosives.....	2.3327	0.9366	25.792	1.7616	1.8969
27.0404 Printing ink.....	2.0014	0.5227	12.987	2.0807	2.5249
27.0405 Carbon black.....	2.0879	0.4429	8.982	2.1248	3.6776
27.0406 Chemicals and chemical preparations, n.e.c.....	1.9973	0.4656	11.846	2.5069	3.1298
27B Agricultural fertilizers and chemicals:					
27.0201 Nitrogenous and phosphatic fertilizers.....	2.1487	0.4384	11.837	3.0193	3.2878
27.0202 Fertilizers, mixing only.....	2.2159	0.4376	11.891	3.7057	4.0018
27.0300 Pesticides and agricultural chemicals, n.e.c.....	1.8215	0.3731	9.053	2.6364	3.7595
28 Plastics and synthetic materials:					
28.0100 Plastics materials and resins.....	1.9697	0.4278	11.108	2.6782	3.1640
28.0200 Synthetic rubber.....	1.9785	0.4829	14.927	2.2387	2.0406
28.0300 Cellulosic manmade fibers.....	2.0069	0.4650	13.237	2.4595	2.4661
28.0400 Manmade organic fibers, except cellulosic.....	2.0296	0.5252	14.724	2.2335	2.2954
29A Drugs:					
29.0100 Drugs.....	2.0803	0.5186	11.298	2.5994	4.8169
29B Cleaning and toilet preparations:					
29.0201 Soap and other detergents.....	1.9565	0.3971	9.923	3.0634	4.1769
29.0202 Polishes and sanitation goods.....	1.9341	0.4223	9.862	2.5725	4.1307
29.0203 Surface active agents.....	1.9397	0.4716	12.726	2.1533	2.3778
29.0300 Toilet preparations.....	2.0743	0.4733	13.213	2.9378	3.0164
30 Paints and allied products:					
30.0000 Paints and allied products.....	1.8865	0.4685	11.440	2.0945	2.6163
31 Petroleum refining and related products:					
31.0101 Petroleum refining.....	1.6682	0.1939	4.267	3.5467	7.0085
31.0102 Lubricating oils and greases.....	2.4964	0.4620	11.236	3.2815	4.4295

Table 2
RIMS II Multipliers for the State of California (July 2002 Release)
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California Industry	Final-demand multipliers			Direct-effect multipliers	
	Output ¹ (dollars)	Earnings ² (dollars)	Employment ³ (number of jobs)	Earnings ⁴ (dollars)	Employment ⁵ (number of jobs)
31.0103 Products of petroleum and coal, n.e.c.....	1.9359	0.3187	8.269	2.7562	3.2280
31.0200 Asphalt paving mixtures and blocks.....	2.2717	0.4611	11.010	2.6089	3.2748
31.0300 Asphalt felts and coatings.....	2.1659	0.4078	10.098	3.0460	3.8705
32 Rubber and miscellaneous plastics products:					
32.0100 Tires and inner tubes.....	1.8013	0.4324	11.162	2.1495	2.6738
32.0200 Rubber and plastics footwear.....	2.0609	0.5891	20.205	2.0823	1.8248
32.0300 Fabricated rubber products, n.e.c.....	1.9309	0.5226	16.343	2.0414	1.9632
32.0400 Miscellaneous plastics products, n.e.c.....	1.8959	0.4664	13.809	2.1715	2.1983
32.0500 Rubber and plastics hose and belting.....	1.9191	0.4905	14.282	2.1498	2.2269
32.0600 Gaskets, packing, and sealing devices.....	1.8892	0.5524	16.890	1.8518	1.8617
33+34 Footwear, leather, and leather products:					
33.0001 Leather tanning and finishing.....	1.6978	0.3468	13.435	2.1176	1.7425
34.0100 Boot and shoe cut stock and findings.....	1.5518	0.2977	14.640	2.0035	1.4829
34.0201 Shoes, except rubber.....	1.8791	0.3967	15.599	2.7063	1.9016
34.0202 House slippers.....	1.7022	0.4675	33.046	1.7375	1.2277
34.0301 Leather gloves and mittens.....	1.8151	0.4585	17.443	1.9565	1.6726
34.0302 Luggage.....	1.9316	0.4957	18.446	2.1406	1.7588
34.0303 Women's handbags and purses.....	1.7827	0.4225	15.338	2.1216	1.7965
34.0304 Personal leather goods, n.e.c.....	1.8223	0.4887	16.251	1.9463	1.8246
34.0305 Leather goods, n.e.c.....	1.8764	0.5147	19.386	1.8955	1.6224
35 Glass and glass products:					
35.0100 Glass and glass products, except containers.....	2.0161	0.5156	14.045	2.2546	2.4886
35.0200 Glass containers.....	2.0586	0.5249	13.060	2.2652	2.8773
36 Stone and clay products:					
36.0100 Cement, hydraulic.....	1.9347	0.4673	10.507	2.2110	3.3877
36.0200 Brick and structural clay tile.....	2.1556	0.6593	17.515	1.9480	2.2333
36.0300 Ceramic wall and floor tile.....	2.1404	0.6062	19.490	2.1223	1.9786
36.0400 Clay refractories.....	2.0830	0.5143	14.305	2.4249	2.7333
36.0500 Structural clay products, n.e.c.....	2.1475	0.6023	15.644	2.0889	2.4814
36.0600 Vitreous china plumbing fixtures.....	1.9886	0.5514	16.711	2.0584	2.0277
36.0701 Vitreous china table and kitchenware.....	2.0740	0.8009	27.533	1.6398	1.5469
36.0702 Fine earthenware table and kitchenware.....	2.4946	0.8065	24.595	2.0995	2.0429
36.0800 Porcelain electrical supplies.....	2.0159	0.6392	16.393	1.8441	2.2059
36.0900 Pottery products, n.e.c.....	2.1798	0.7558	26.787	1.8079	1.6347
36.1000 Concrete block and brick.....	2.2272	0.6341	16.309	2.2236	2.5733
36.1100 Concrete products, except block and brick.....	2.2213	0.6470	17.189	2.1615	2.4151
36.1200 Ready-mixed concrete.....	2.2720	0.6076	14.562	2.4349	3.1180
36.1300 Lime.....	2.1093	0.5093	12.359	2.3290	3.0753
36.1400 Gypsum products.....	1.9708	0.6318	14.845	1.7563	2.2636
36.1500 Cut stone and stone products.....	2.0708	0.6255	18.719	2.0159	2.0085
36.1600 Abrasive products.....	1.9134	0.4853	14.030	2.1732	2.2366
36.1700 Asbestos products.....	1.9162	0.8236	26.024	1.4744	1.4901
36.1900 Minerals, ground or treated.....	1.8266	0.4668	12.050	1.9957	2.4319
36.2000 Mineral wool.....	1.8904	0.4734	11.916	2.0974	2.6248
36.2100 Nonclay refractories.....	1.9847	0.5133	13.238	2.2092	2.8083
36.2200 Nonmetallic mineral products, n.e.c.....	2.1360	0.5890	16.594	2.2867	2.3362
37 Primary iron and steel manufacturing:					
37.0101 Blast furnaces and steel mills.....	2.0279	0.4776	12.166	2.6206	3.2862
37.0102 Electrometallurgical products, except steel.....	1.8533	0.4993	15.589	1.9336	1.8574
37.0103 Steel wiredrawing and steel nails and spikes.....	1.7775	0.4159	11.874	2.1458	2.2236
37.0104 Cold-rolled steel sheet, strip, and bars.....	1.7646	0.3399	8.211	2.7319	4.1100
37.0105 Steel pipe and tubes.....	1.7827	0.4031	10.372	2.2052	2.6452
37.0200 Iron and steel foundries.....	2.1193	0.6574	19.758	2.0018	1.9841
37.0300 Iron and steel forgings.....	1.9271	0.5179	13.896	2.0411	2.3167
37.0401 Metal heat treating.....	1.9954	0.5972	16.496	1.9004	2.0432
37.0402 Primary metal products, n.e.c.....	1.9835	0.5405	14.207	2.0697	2.5550
38 Primary nonferrous metals manufacturing:					
38.0100 Primary smelting and refining of copper.....	1.0000	0.0000	0.000	0.0000	0.0000
38.0400 Primary aluminum.....	1.9186	0.4730	13.151	2.0597	2.2036
38.0501 Primary nonferrous metals, n.e.c.....	1.7109	0.3955	10.910	2.0054	2.2211
38.0600 Secondary nonferrous metals.....	2.1982	0.4465	12.061	5.0062	5.8610
38.0700 Rolling, drawing, and extruding of copper.....	1.8397	0.3805	11.158	2.7977	2.7098
38.0800 Aluminum rolling and drawing.....	1.8626	0.4045	10.815	2.4183	2.7756
38.0900 Nonferrous rolling and drawing, n.e.c.....	1.9108	0.5585	17.218	1.8740	1.8338
38.1000 Nonferrous wiredrawing and insulating.....	1.9353	0.3854	10.107	2.9134	3.7206
38.1100 Aluminum castings.....	1.9875	0.5867	17.888	1.9191	1.8954
38.1200 Copper foundries.....	1.8681	0.5631	18.054	1.7952	1.7238
38.1300 Nonferrous castings, n.e.c.....	1.9820	0.5923	17.312	1.8903	1.9500
38.1400 Nonferrous forgings.....	2.0660	0.5387	14.371	2.2060	2.5995
39 Metal containers:					
39.0100 Metal cans.....	2.1407	0.4109	10.319	3.5054	4.9763
39.0200 Metal shipping barrels, drums, kegs, and pails.....	1.9503	0.5001	13.672	2.0911	2.2626
40 Heating, plumbing, and fabricated structural metal products:					
40.0100 Enameled iron and metal sanitary ware.....	1.9915	0.5750	17.336	1.9729	1.9583
40.0200 Plumbing fixture fittings and trim.....	2.1220	0.5391	14.994	2.5124	2.7555
40.0300 Heating equipment, except electric and warm air furnaces.....	1.9605	0.5071	13.988	2.2181	2.3941
40.0400 Fabricated structural metal.....	1.9962	0.5752	14.940	1.9799	2.3575
40.0500 Metal doors, sash, frames, molding, and trim.....	1.9838	0.5580	16.544	1.9818	2.0041
40.0600 Fabricated plate work (boiler shops).....	1.9787	0.5300	14.143	2.1314	2.4401

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California Industry	Final-demand multipliers			Direct-effect multipliers	
	Output ¹ (dollars)	Earnings ² (dollars)	Employment ³ (number of jobs)	Earnings ⁴ (dollars)	Employment ⁵ (number of jobs)
40.0700 Sheet metal work.....	1.9904	0.5735	16.383	1.9491	2.0544
40.0800 Architectural and ornamental metal work.....	1.9224	0.5893	16.261	1.8012	1.9617
40.0901 Prefabricated metal buildings and components.....	1.8619	0.4855	13.891	2.0054	2.0978
40.0902 Miscellaneous structural metal work.....	1.9247	0.5897	14.318	1.7977	2.2304
41 Screw machine products and stampings:					
41.0100 Screw machine products, bolts, etc.....	2.0570	0.6442	17.031	1.9389	2.2577
41.0201 Automotive stampings.....	2.0016	0.5457	14.490	2.1658	2.4827
41.0202 Crowns and closures.....	1.8695	0.3869	10.564	2.6064	2.9497
41.0203 Metal stampings, n.e.c.....	2.0438	0.5717	15.779	2.1384	2.3166
42 Other fabricated metal products:					
42.0100 Cutlery.....	1.8142	0.4486	12.414	2.1167	2.3640
42.0201 Hand and edge tools, except machine tools and handsaws.....	1.9173	0.5743	17.053	1.8698	1.9072
42.0202 Saw blades and handsaws.....	1.9757	0.6252	17.790	1.8327	1.9355
42.0300 Hardware, n.e.c.....	2.0468	0.5589	15.003	2.1942	2.5198
42.0401 Plating and polishing.....	2.0479	0.6779	21.243	1.8055	1.7752
42.0402 Coating, engraving, and allied services, n.e.c.....	1.9612	0.5386	16.788	1.9976	1.9225
42.0500 Miscellaneous fabricated wire products.....	2.0131	0.5855	17.408	1.9913	2.0074
42.0700 Steel springs, except wire.....	1.9861	0.5678	16.613	1.9850	2.0216
42.0800 Pipe, valves, and pipe fittings.....	1.9894	0.5473	14.096	2.1254	2.5496
42.1000 Metal foil and leaf.....	1.8800	0.3793	11.246	2.6905	2.6292
42.1100 Fabricated metal products, n.e.c.....	2.0328	0.5851	16.779	2.0456	2.1421
43 Engines and turbines:					
43.0100 Turbines and turbine generator sets.....	1.9422	0.4818	11.400	2.3421	3.4575
43.0200 Internal combustion engines, n.e.c.....	1.9804	0.5168	14.372	2.2693	2.4802
44+45 Farm, construction, and mining machinery:					
44.0001 Farm machinery and equipment.....	1.8509	0.5104	15.220	1.9716	1.9651
44.0002 Lawn and garden equipment.....	1.8085	0.3605	10.927	2.9208	2.6704
45.0100 Construction machinery and equipment.....	1.9628	0.5279	14.755	2.1831	2.3150
45.0200 Mining machinery, except oil field.....	2.0628	0.6378	16.259	1.9722	2.3733
45.0300 Oil and gas field machinery and equipment.....	2.1110	0.7221	17.130	1.8115	2.3413
46 Materials handling machinery and equipment:					
46.0100 Elevators and moving stairways.....	2.1342	0.5664	15.726	2.3693	2.4947
46.0200 Conveyors and conveying equipment.....	2.0308	0.6109	16.355	1.9929	2.2359
46.0300 Hoists, cranes, and monorails.....	1.9235	0.5722	14.192	1.8780	2.3114
46.0400 Industrial trucks and tractors.....	2.1224	0.5268	14.657	2.7231	2.8467
47 Metalworking machinery and equipment:					
47.0100 Machine tools, metal cutting types.....	2.1380	0.6045	14.417	2.2811	3.1520
47.0200 Machine tools, metal forming types.....	2.1326	0.6941	18.076	1.9389	2.2454
47.0300 Special dies and tools and machine tool accessories.....	2.1220	0.8056	21.829	1.6963	1.8773
47.0401 Power-driven handtools.....	1.9851	0.4965	14.257	2.3924	2.4524
47.0402 Rolling mill machinery and equipment.....	2.1017	0.7632	21.962	1.7346	1.8172
47.0404 Electric and gas welding and soldering equipment.....	1.9876	0.6233	16.311	1.8350	2.1011
47.0405 Industrial patterns.....	2.1100	0.8928	24.088	1.5770	1.7482
47.0500 Metalworking machinery, n.e.c.....	2.0977	0.6898	18.595	1.8672	2.0809
48 Special industry machinery and equipment:					
48.0100 Food products machinery.....	2.0914	0.6482	17.425	1.9982	2.2427
48.0200 Textile machinery.....	2.0909	0.6485	24.683	1.9811	1.6361
48.0300 Woodworking machinery.....	2.0806	0.6253	16.265	2.0197	2.3432
48.0400 Paper industries machinery.....	2.0425	0.6707	17.154	1.8627	2.2053
48.0500 Printing trades machinery and equipment.....	2.0985	0.6577	16.520	1.9670	2.3982
48.0600 Special industry machinery, n.e.c.....	2.1624	0.6175	13.588	2.2372	3.5300
49 General industrial machinery and equipment:					
49.0100 Pumps and compressors.....	2.0413	0.5892	14.983	2.0859	2.5582
49.0200 Ball and roller bearings.....	2.0074	0.6037	16.251	1.9991	2.2529
49.0300 Blowers and fans.....	1.9730	0.5876	16.490	1.9495	2.0828
49.0500 Mechanical power transmission equipment.....	2.0292	0.6537	16.332	1.8769	2.2864
49.0600 Industrial process furnaces and ovens.....	2.1140	0.7371	19.574	1.7924	2.0133
49.0700 General industrial machinery and equipment, n.e.c.....	1.9724	0.6007	15.165	1.9172	2.3070
49.0800 Packaging machinery.....	2.0918	0.6506	16.760	2.0052	2.3517
50 Miscellaneous machinery, except electrical:					
50.0100 Carburetors, pistons, rings, and valves.....	2.1262	0.6334	17.874	2.1012	2.2683
50.0200 Fluid power equipment.....	2.1417	0.7007	16.853	1.9505	2.5623
50.0300 Scales and balances, except laboratory.....	2.1364	0.5970	14.584	2.1723	2.7015
50.0400 Industrial and commercial machinery and equipment, n.e.c.....	2.1342	0.7836	21.536	1.7564	1.9267
51 Computer industry machinery:					
51.0102 Calculating and accounting machines.....	2.0441	0.4513	10.848	2.9464	4.0742
51.0103 Electronic computers.....	2.4354	0.5038	11.180	4.4251	1.2344
51.0104 Computer peripheral equipment.....	2.7549	0.7154	15.766	3.1703	5.6111
51.0400 Office machines, n.e.c.....	2.2134	0.5875	13.273	2.4518	3.8247
52 Service industry machinery:					
52.0100 Automatic vending machines.....	2.0394	0.5707	17.658	2.1497	2.0521
52.0200 Commercial laundry equipment.....	1.9952	0.6012	18.791	1.9015	1.8391
52.0300 Refrigeration and heating equipment.....	1.9654	0.5000	13.688	2.2884	2.5193
52.0400 Measuring and dispensing pumps.....	2.1246	0.5665	14.073	2.4163	3.1788
52.0500 Service industry machinery, n.e.c.....	1.9886	0.5684	15.681	2.0401	2.2022
53 Electrical industrial equipment and apparatus:					
53.0200 Power, distribution, and specialty transformers.....	2.0201	0.5187	13.598	2.2978	2.6711
53.0300 Switchgear and switchboard apparatus.....	1.9508	0.5357	13.902	2.0729	2.4218
53.0400 Motors and generators.....	2.0005	0.5325	14.614	2.1446	2.3494

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Total Multipliers for Output, Earnings, and Employment by Individual Industry

California Industry	Final-demand multipliers			Direct-effect multipliers	
	Output ¹ (dollars)	Earnings ² (dollars)	Employment ³ (number of jobs)	Earnings ⁴ (dollars)	Employment ⁵ (number of jobs)
53.0500 Relays and industrial controls.....	2.0929	0.6325	16.616	2.0152	2.3075
53.0700 Carbon and graphite products.....	1.9780	0.5710	15.522	1.8619	2.0479
53.0800 Electrical industrial apparatus, n.e.c.....	2.1157	0.6290	16.894	2.0792	2.4697
54 Household appliances:					
54.0100 Household cooking equipment.....	2.2144	0.5112	14.830	3.0817	2.9626
54.0200 Household refrigerators and freezers.....	2.0112	0.4400	12.439	2.8561	2.9591
54.0300 Household laundry equipment.....	1.8895	0.3931	13.145	2.8098	2.2531
54.0400 Electric house wares and fans.....	1.9845	0.4462	12.974	2.6918	2.7153
54.0500 Household vacuum cleaners.....	1.9653	0.4392	11.062	2.7751	3.8591
54.0700 Household appliances, n.e.c.....	1.9815	0.4435	12.184	2.6921	3.0455
55 Electric lighting and wiring equipment:					
55.0100 Electric lamp bulbs and tubes.....	1.8990	0.4559	13.445	2.2789	2.2595
55.0200 Lighting fixtures and equipment.....	2.1472	0.5731	17.203	2.3279	2.2577
55.0300 Wiring devices.....	1.9531	0.5522	15.419	2.0021	2.1558
56 Audio, video, and communication equipment:					
56.0100 Household audio and video equipment.....	2.6684	0.5572	13.999	5.3106	7.7427
56.0200 Prerecorded records and tapes.....	2.0628	0.5156	11.744	2.2828	3.5413
56.0300 Telephone and telegraph apparatus.....	2.4324	0.5184	11.709	4.3353	8.6121
56.0500 Communication equipment.....	2.1657	0.6140	13.546	2.1588	3.2157
57 Electronic components and accessories:					
57.0100 Electron tubes.....	2.1793	0.5845	13.121	2.3622	3.9383
57.0200 Semiconductors and related devices.....	2.1296	0.5569	11.555	2.4874	5.4120
57.0300 Other electronic components.....	2.4323	0.6162	15.656	2.8872	3.4712
58 Miscellaneous electrical machinery and supplies:					
58.0100 Storage batteries.....	1.9794	0.5011	12.981	2.2409	2.7411
58.0200 Primary batteries, dry and wet.....	1.8591	0.4327	11.499	2.3049	2.7161
58.0400 Electrical equipment for internal combustion engines.....	2.1048	0.5289	16.260	2.4439	2.2178
58.0600 Magnetic and optical recording media.....	2.1782	0.4529	12.104	3.8309	5.1773
58.0700 Electrical machinery, equipment, and supplies, n.e.c.....	2.3385	0.7307	15.150	2.0865	3.6203
59A Motor vehicles (passenger cars and trucks):					
59.0301 Motor vehicles and passenger car bodies.....	1.9362	0.3561	9.288	4.1494	7.2072
59B Truck and bus bodies, trailers, and motor vehicles parts:					
59.0100 Truck and bus bodies.....	1.9676	0.4982	14.027	2.2851	2.4549
59.0200 Truck trailers.....	1.9335	0.4845	13.388	2.1868	2.4066
59.0302 Motor vehicle parts and accessories.....	2.0716	0.5050	13.864	2.6671	2.8857
60 Aircraft and parts:					
60.0100 Aircraft.....	2.3284	0.6943	15.006	2.3589	3.6391
60.0200 Aircraft and missile engines and engine parts.....	2.0402	0.5964	13.347	2.0928	3.0320
60.0400 Aircraft and missile equipment, n.e.c.....	2.0780	0.7008	17.014	1.8197	2.2646
61 Other transportation equipment:					
61.0100 Ship building and repairing.....	2.0346	0.6962	19.170	1.7431	1.8928
61.0200 Boat building and repairing.....	1.9584	0.5899	18.008	1.8669	1.8413
61.0300 Railroad equipment.....	1.8404	0.4798	12.640	2.0303	2.3491
61.0500 Motorcycles, bicycles, and parts.....	1.8706	0.4596	13.894	2.2023	2.1718
61.0601 Travel trailers and campers.....	2.1237	0.4800	15.604	2.7845	2.4321
61.0603 Motor homes.....	1.8476	0.3794	11.367	2.6383	2.5980
61.0700 Transportation equipment, n.e.c.....	1.7362	0.3865	11.157	2.2125	2.2838
62 Scientific and controlling instruments:					
62.0101 Search and navigation equipment.....	2.2345	0.6899	14.733	2.1041	3.2667
62.0102 Laboratory apparatus and furniture.....	2.0746	0.6323	16.715	1.9784	2.2656
62.0200 Mechanical measuring devices.....	2.1154	0.6289	15.307	2.0506	2.5563
62.0300 Environmental controls.....	2.1302	0.6454	16.212	2.0486	2.4422
62.0400 Surgical and medical instruments and apparatus.....	1.9624	0.5445	12.857	2.0445	2.7578
62.0500 Surgical appliances and supplies.....	1.8919	0.5028	12.688	2.0585	2.5673
62.0600 Dental equipment and supplies.....	2.0495	0.6207	16.341	1.9755	2.2314
62.0700 Watches, clocks, watchcases, and parts.....	1.9254	0.5514	16.575	1.9645	1.9754
62.0800 X-ray apparatus and tubes.....	2.0105	0.4936	11.716	2.3637	3.2845
62.0900 Electromedical and electrotherapeutic apparatus.....	2.1003	0.5210	11.598	2.5005	4.1287
62.1000 Laboratory and optical instruments.....	2.2832	0.6963	15.521	2.1783	3.3814
62.1100 Instruments to measure electricity.....	2.1659	0.6618	13.454	2.0208	3.4649
63 Ophthalmic and photographic equipment:					
63.0200 Ophthalmic goods.....	2.0665	0.6485	16.083	1.9429	2.3999
63.0300 Photographic equipment and supplies.....	1.7335	0.3765	9.849	2.3001	2.7109
64 Miscellaneous manufacturing:					
64.0101 Jewelry, precious metal.....	1.8506	0.5066	19.836	1.9570	1.6257
64.0102 Jewelers' materials and lapidary work.....	1.8403	0.5885	21.485	1.7064	1.5524
64.0104 Silverware and plated ware.....	1.9745	0.6411	28.071	1.8059	1.4443
64.0105 Costume jewelry.....	1.9716	0.4842	20.358	2.4050	1.7743
64.0200 Musical instruments.....	2.2116	0.7163	24.268	1.9578	1.7772
64.0301 Games, toys, and children's vehicles.....	2.1829	0.5627	15.864	2.5701	2.6556
64.0302 Dolls and stuffed toys.....	2.2289	0.6466	17.114	2.3061	2.8303
64.0400 Sporting and athletic goods, n.e.c.....	2.1281	0.5913	19.294	2.2705	2.0266
64.0501 Pens, mechanical pencils, and parts.....	2.0983	0.5701	16.181	2.2745	2.4946
64.0502 Lead pencils and art goods.....	2.3595	0.4994	15.308	4.5997	3.7313
64.0503 Marking devices.....	2.1022	0.6232	22.424	1.9798	1.7037
64.0504 Carbon paper and inked ribbons.....	2.0481	0.5006	17.202	2.4244	2.0220
64.0700 Fasteners, buttons, needles, and pins.....	1.9561	0.5799	21.782	1.9006	1.6349
64.0800 Brooms and brushes.....	2.0679	0.6045	20.895	2.0193	1.7876
64.0900 Hard surface floor coverings, n.e.c.....	1.8538	0.4340	11.169	2.3715	3.0151

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64.1000 Burial caskets.....	1.8026	0.4550	16.485	2.0029	1.7091
64.1100 Signs and advertising specialties.....	2.1914	0.7813	26.891	1.7853	1.6474
64.1200 Manufacturing industries, n.e.c.....	2.1401	0.6684	22.960	1.9893	1.7829
TRANSPORTATION, COMMUNICATIONS, AND UTILITIES*					
65A Railroads and related services; passenger ground transportation:					
65.0100 Railroads and related services.....	2.1328	0.6801	16.180	1.9637	2.6105
65.0200 Local and suburban transit and interurban highway passenger transportation.....	2.1231	0.6810	25.000	1.8892	1.6152
65B Motor freight transportation and warehousing:					
65.0301 Trucking and courier services, except air.....	2.3728	0.7035	21.698	2.3041	2.2729
65.0302 Warehousing and storage.....	2.2369	0.6332	20.166	2.4428	2.5056
65C Water transportation:					
65.0400 Water transportation.....	2.4723	0.5829	14.805	3.7245	5.0898
65D Air transportation:					
65.0500 Air transportation.....	2.2860	0.6661	18.355	2.2371	2.4636
65E Pipelines, freight forwarders, and related services:					
65.0600 Pipelines, except natural gas.....	1.6265	0.2789	6.788	2.9943	5.0889
65.0701 Freight forwarders and other transportation services.....	2.5818	0.8583	24.023	2.3548	2.3179
65.0702 Arrangement of passenger transportation.....	2.3588	0.7704	23.673	2.2850	1.9546
66 Communications, except radio and TV:					
66.0100 Telephone and telegraph communications, and communications services, n.e.c.....	2.1113	0.5484	11.576	2.4835	4.6300
66.0200 Cable and other pay television services.....	2.4663	0.5227	12.606	4.0686	6.1308
67 Radio and TV broadcasting:					
67.0000 Radio and TV broadcasting.....	3.0047	0.9130	20.383	3.6402	6.0827
68A Electric services (utilities):					
68.0100 Electric services (utilities).....	1.7153	0.3726	7.552	2.2085	4.5765
68B Gas production and distribution (utilities):					
68.0201 Natural gas transportation.....	1.9186	0.3386	8.154	4.3344	7.6307
68.0202 Natural gas distribution.....	2.2640	0.3376	7.482	4.3210	9.0186
68C Water and sanitary services:					
68.0301 Water supply and sewerage systems.....	2.2670	0.6300	15.220	2.7510	4.2417
68.0302 Sanitary services, steam supply, and irrigation systems.....	2.2324	0.6767	15.210	2.1030	3.0195
WHOLESALE AND RETAIL TRADE					
69A Wholesale trade:					
69.0100 Wholesale trade.....	2.0944	0.6426	16.822	2.0142	2.3706
69B Retail trade:					
69.0200 Retail trade, except eating and drinking.....	2.1447	0.6985	25.931	1.8865	1.6388
FINANCE, INSURANCE, AND REAL ESTATE					
70A Finance:					
70.0100 Banking.....	2.0515	0.5544	13.965	2.4907	2.8840
70.0200 Credit agencies other than banks.....	2.7376	1.0246	29.027	2.2013	2.0873
70.0300 Security and commodity brokers.....	2.6475	0.9624	16.607	2.2200	4.7577
70B Insurance:					
70.0400 Insurance carriers.....	2.8533	0.9446	23.819	2.8694	3.7726
70.0500 Insurance agents, brokers, and services.....	2.2810	0.8134	24.253	1.9060	1.9672
71A Owner-occupied dwellings:					
71.0100 Owner-occupied dwellings.....	1.2981	0.0936	2.770	0.0000	0.0000
71B Real estate and royalties:					
71.0201 Real estate agents, managers, operators, and lessors.....	1.7197	0.3090	10.191	3.1889	2.8312
71.0202 Royalties.....	1.0000	0.0000	0.000	0.0000	0.0000
SERVICES					
72A Hotels and lodging places:					
72.0101 Hotels.....	2.2524	0.7152	26.522	2.0749	1.7740
72.0102 Other lodging places.....	2.1791	0.5867	23.486	2.4287	1.8600
72B Personal and repair services (except auto):					
72.0201 Laundry, cleaning, garment services, and shoe repair.....	2.4623	0.9620	44.663	1.8118	1.4742
72.0202 Funeral service and crematories.....	2.1196	0.8295	28.977	1.6448	1.5532
72.0203 Portrait photographic studios, and other miscellaneous personal services.....	2.3508	0.7122	30.972	2.4729	1.6917
72.0204 Electrical repair shops.....	2.1345	0.7604	24.756	1.7532	1.6668
72.0205 Watch, clock, jewelry, and furniture repair.....	2.0237	0.5197	20.955	2.2664	1.7248
72.0300 Beauty and barber shops.....	2.5423	1.0017	59.498	1.8513	1.4039
73A Computer and data processing services:					
73.0104 Computer and data processing services.....	2.3504	0.8228	16.443	1.9345	3.3400
73B Legal, engineering, accounting, and related services:					
73.0301 Legal services.....	2.3336	0.9661	19.406	1.6936	2.6561
73.0302 Engineering, architectural and surveying services.....	2.4825	0.9124	23.661	2.0804	2.5363
73.0303 Accounting, auditing and bookkeeping, and miscellaneous, n.e.c.....	2.6556	1.1028	32.462	1.8795	1.9119
73C Other business and professional services, except medical:					
73.0101 Miscellaneous repair shops.....	2.0199	0.6687	21.564	1.8017	1.7328
73.0102 Services to dwellings and other buildings.....	2.0748	0.7944	38.025	1.6620	1.3565
73.0103 Personnel supply services.....	1.9265	0.7979	34.418	1.5152	1.3385
73.0106 Detective and protective services.....	2.0210	0.8270	37.612	1.5706	1.3422
73.0107 Miscellaneous equipment rental and leasing.....	1.9723	0.5757	16.082	2.0474	2.1868
73.0108 Photofinishing labs and commercial photography.....	2.0443	0.6292	17.747	2.0777	2.2828
73.0109 Other business services.....	1.9722	0.5836	17.937	2.0033	1.9639
73.0111 Management and consulting services.....	2.2436	0.7703	20.515	1.9827	2.3299

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73.0112 Testing and research labs.....	2.3626	0.9233	23.000	1.8138	2.2051
73D Advertising:					
73.0200 Advertising.....	2.2840	0.8616	20.624	1.8688	2.4404
74 Eating and drinking places:					
74.0000 Eating and drinking places.....	2.3035	0.6973	34.266	2.0253	1.4719
75 Automotive repair and services:					
75.0001 Automotive rental and leasing, without drivers.....	2.1741	0.5333	15.987	2.8740	2.9033
75.0002 Automotive repair shops and services.....	2.0344	0.6021	18.818	1.9718	1.9600
75.0003 Automobile parking and car washes.....	2.1196	0.6221	27.850	2.0131	1.5464
76 Amusements:					
76.0101 Motion picture services and theaters.....	2.7462	0.9108	23.674	2.4340	2.8040
76.0102 Video tape rental.....	2.5733	0.5682	24.575	3.6847	1.8823
76.0201 Theatrical producers (except motion picture), bands, orchestras and entertainers.....	2.7098	0.8474	22.263	2.7624	3.3083
76.0202 Bowling centers.....	2.2068	0.6845	48.219	1.9933	1.2742
76.0203 Professional sports clubs and promoters.....	2.5172	1.0803	20.412	1.8075	2.8584
76.0204 Racing, including track operation.....	2.2347	0.5225	22.342	2.7433	2.0748
76.0205 Physical fitness facilities and membership sports and recreation clubs.....	2.3163	0.7670	43.813	1.9334	1.3638
76.0206 Other amusement and recreation services.....	2.0440	0.6070	30.398	2.0232	1.4509
77A Health services:					
77.0100 Doctors and dentists.....	2.3697	1.0104	24.287	1.6720	2.0727
77.0200 Hospitals.....	2.4334	0.7350	20.720	2.3099	2.5884
77.0301 Nursing and personal care facilities.....	2.4399	1.0291	38.940	1.6601	1.5042
77.0303 Home health care services.....	2.3910	0.9976	34.344	1.6225	1.5318
77.0304 Veterinary services.....	2.5698	0.7928	26.391	2.3301	1.9494
77.0305 Other medical and health services.....	2.0952	0.7330	21.065	1.7489	1.8423
77B Educational and social services, and membership organizations:					
77.0401 Elementary and secondary schools.....	2.5012	0.8960	38.193	1.9345	1.5527
77.0402 Colleges, universities, and professional schools.....	2.4758	0.9144	36.392	1.8734	1.5987
77.0403 Private libraries, vocational schools, and educational services, n.e.c.....	2.1148	0.6676	32.027	1.9924	1.4445
77.0501 Business associations and professional membership organizations.....	2.4968	0.7624	22.014	2.4127	2.5280
77.0502 Labor organizations, civic, social, and fraternal associations.....	2.4980	0.6965	28.122	2.6517	1.8810
77.0503 Religious organizations.....	2.3213	0.9879	45.166	1.5885	1.3507
77.0504 Other membership organizations.....	2.9162	0.8002	23.892	4.4848	3.4465
77.0600 Job training and related services.....	2.3216	0.8384	39.934	1.8259	1.4173
77.0700 Child day care services.....	2.2494	0.7008	33.714	1.9780	1.4577
77.0800 Residential care.....	2.3965	0.8119	36.633	1.9530	1.5467
77.0900 Social services, n.e.c.....	2.5408	0.7553	26.148	2.4816	2.0508
SPECIAL INDUSTRIES					
78 Federal Government enterprises:					
78.0100 U.S. Postal Service.....	2.2997	0.9238	26.333	1.6902	1.8094
78.0200 Federal electric utilities.....	1.0000	0.0000	0.000	0.0000	0.0000
78.0500 Other Federal Government enterprises.....	1.7928	0.5089	19.650	1.8105	1.5464
79 State and local government enterprises:					
79.0000 State and local government enterprises.....	2.1770	0.5446	14.204	2.6880	3.2459
91 Households:					
91.0000 Households**.....	1.4565	0.4204	13.720	0.0000	0.0000

* Includes Federal Government enterprises.

** Industry output is defined as the compensation of domestic household workers.

1 Each entry in column 1 represents the dollar change in output of the total California economy for each \$1 change of output delivered by the selected California industry.

2 Each entry in column 2 represents the dollar change in earnings of households employed by all California industries for each \$1 change of output delivered by the selected California industry.

3 Each entry in column 3 represents the change in the number of jobs in the total California economy for each \$1 million change of output delivered by the selected California industry. Because the employment multipliers are based on 1999 data, the output delivered to final demand should be in 1999 dollars.

4 Each entry in column 4 represents the dollar change in earnings of households employed by all California industries for each \$1 change of earnings paid directly to households employed by the selected California industry.

5 Each entry in column 5 represents the change in the number of jobs in the total California economy for each single job change in the selected California industry.

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

Data released July 2002.

Multipliers are based on the 1997 Benchmark Input-Output Table for the Nation and 1999 regional data. For further information, see *Regional Multipliers: A User Handbook for the Regional Input-Output Modeling System (RIMS II)*, Third Edition, Wash DC. (202) 606-5343. Web Address: <http://www.bea.doc.gov/bea/regional/rims/>